

## IN THE UNITED STATES PATENT &amp; TRADEMARK OFFICE

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Response Under 37 CFR 1.116

Appln. Ser. No.:	Filed:	Inventor(s):	Atty Dkt:
09/543,951	6 April 2000	W. Dalton	1633-015A
Title: Improved Brush Seal Designs for Turbines and Similar Rotary Apparatus			
Examiner: M. Rogers			Art Unit: 3626

Asst. Comm'r for Patents  
Washington, D.C. 20231-00012 Pages Total **VIA FACSIMILE**  
703-746-3730

## INFORMAL COMMUNICATION

Dear Sir:

In connection with a telephonic discussion between the examiner and the undersigned, the following are proposed amendments to the claims:

1. (Proposed Amendment.) A retractable packing segment for an apparatus that extracts work from the expansion of a gaseous working fluid, said apparatus comprising:

a rotating shaft disposed in a casing,

a plurality of [said] packing segments disposed in a ring [formed from a plurality of packing segments] and centered on an axis defined by said shaft to provide a seal therearound,

said retractable packing segment comprising:

an inner face for sealing against said shaft[;] and an outer face supporting a T-shaped extension, said inner and outer faces and said extension spanning opposing side ends, said side ends cut parallel with radii of said axis; and

at least one brush seal disposed on the inner face of said segment [opposing ends of said segment cut parallel with radii of said axis; and], said brush seal having opposing ends, at least one of said ends cut non-parallel with radii of said axis.

6. (Proposed Amendment.) A retractable brush seal for an apparatus that extracts work from the expansion of a gaseous working fluid, said apparatus comprising:

a rotating shaft disposed in a casing,  
said brush seal in the geometry of a ring formed from a plurality of adjacent abutting packing segments and centered on an axis defined by said shaft to provide a brush seal therearound,

each said segment comprising:

an innerface for sealing against said shaft and an outer face supporting a T-shaped extension, said inner and outer faces and said extension spanning opposing side ends, said side ends cut parallel with radii of said axis; and;

at least one brush seal disposed on the inner face of said segment[;].  
[opposing ends of said segment cut parallel with radii of said axis;] said brush seal having opposing side ends cut non-parallel with radii of said axis, one of said side ends cut angled to form a tongue extending past the segment side end and the other of said brush seal ends cut at the same angle relative to said segment to provide a groove for accepting a tongue formed by a brush seal on [another] an adjacent packing segment.

Respectfully submitted,



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2 July 2002

**CERTIFICATE OF MAILING OR  
TRANSMISSION – 37 CFR 1.8**

I hereby certify that I have a reasonable basis that this paper, along with any referred to above, (i) are being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to Commissioner of Patents and Trademarks, Washington, D.C. 20231, or (ii) are being transmitted to the U.S. Patent & Trademark Office in accordance with 37 CFR § 1.6(d).

DATE: 2 July 2002

NAME: Brad Ruben

SIGNATURE: Brad Ruben